

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 May 2005 (19.05.2005)

PCT

(10) International Publication Number
WO 2005/045262 A3

(51) International Patent Classification⁷: **F16L 15/06**

(21) International Application Number:
PCT/US2004/035796

(22) International Filing Date: 28 October 2004 (28.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/516,488 31 October 2003 (31.10.2003) US

(71) Applicant (for all designated States except US): GKN
SINTER METALS, INC. [US/US]; N112 W18700
Mequon Road, Germantown, WI 53022 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): KNOTT, Henry, J.
[US/US]; 5406 Scott Court, Ypsilanti, MI 48197 (US).

(74) Agent: FRANZINI, John, D.; Quarles & Brady LLP, 411
E. Wisconsin Avenue, Milwaukee, WI 53202 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

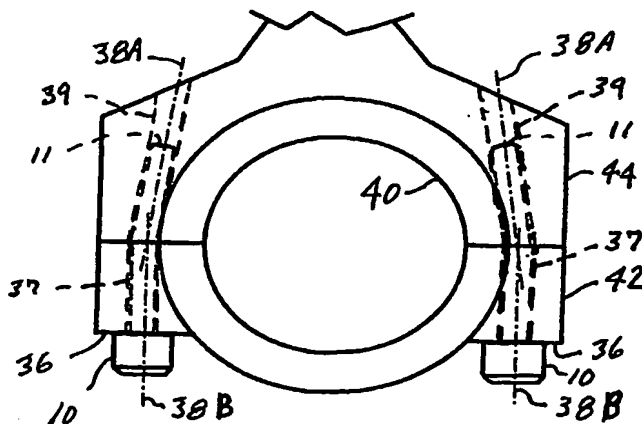
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
25 August 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: FASTENER PRE-STRESSING JOINT



(57) Abstract: Fastener joints induce static pre-stresses into a fastener that clamps the joint in a magnitude equal and direction opposite from bending stresses induced in the fastener by application loading. Such joints include angling the bolts seats of a connecting rod bearing cap inwardly, creating a relief at the bolted interface between the cap and the rod adjacent to the main bore of the connecting rod or skewing the threaded holes in the rod body inwardly as they extend from the bolted joint faces.

WO 2005/045262 A3